

# UK Public Private Partnerships:

## The Role of Asset Management

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# What is (Infrastructure) asset management?

*Systematic and coordinated activities and practices through which an organization optimally and **sustainably** manages its assets and **asset systems**, their associated performance, risks and expenditures over their life cycles for the purpose of achieving its organizational strategic plan*

British Standards Institute – PAS-55: 2008 Part 1 – Specification for the Optimised Management of Physical Assets – produced in association with the Institute of Asset Management

- It is an overall approach to running an asset-intensive business
  - not a technology, technique, system or fad;
- It is a combination of management, financial, economic, engineering and practices applied to physical asset;
- It is about making the most of our assets by doing the right amount of work, at the right time and cost to deliver the right level of service

# Examples of benefit...

- **Yorkshire Water:** 81% improvement in performance and 11% reduction in operating costs – only A-A ranked WASC in the UK
- **Railcorp (Australia):** 30% saving on maintenance costs – adopting RBM
- **National Grid:** 30% volume of work removed – adopting RCM
- **Energy Australia:** 30% saving on maintenance costs
- **Metronet Rail:** OpEx reduction of \$15Million, performance improvement of \$17million and removal of financed risk of \$32million over 18months.
- **Merseyrail:** Reduction of \$11Million in costs and performance improvement by 2015 (25% of Engineering budget)
- **Highways Agency:** reduction of \$101 Million operating costs and \$78Million of opportunity benefits over a 10year period.

# Benefits of Improved Asset Management...

- Being able to prove you are a “best appropriate practice” asset steward;
- Enable systematic evaluation of approaches and systems;
- Winning the tariff or budget debate with regulators;
- Assuring the logic of their capital and maintenance allocations;
- Reporting the long term sustainability of asset systems
- The interdependency of assets for example – rolling stock, track, signals
- Determining how to prioritise restricted budgets
- Prepare a programme of Asset Management Improvement Priorities



# Issues in the transport sector...

- Complex asset 'systems'
- Lack of built-in redundancy in the system
- High dependency on the system
- Severe lack of stable funding mechanisms
- Maintenance backlogs (infrastructure deficit)



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# Overview...

- **Examples from the UK – London Underground and the PPP**
- **Metronet Rail – Private Contractors**
- **Lessons Learnt –.how to make a success of PPP's**



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# (1). London Underground

Since 2003 LU fixed assets (including track, signalling, telecoms, stations and structures) and rolling stock have been managed through 3 public private partnership contracts



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# Why the need for Private Investment?

## Financial

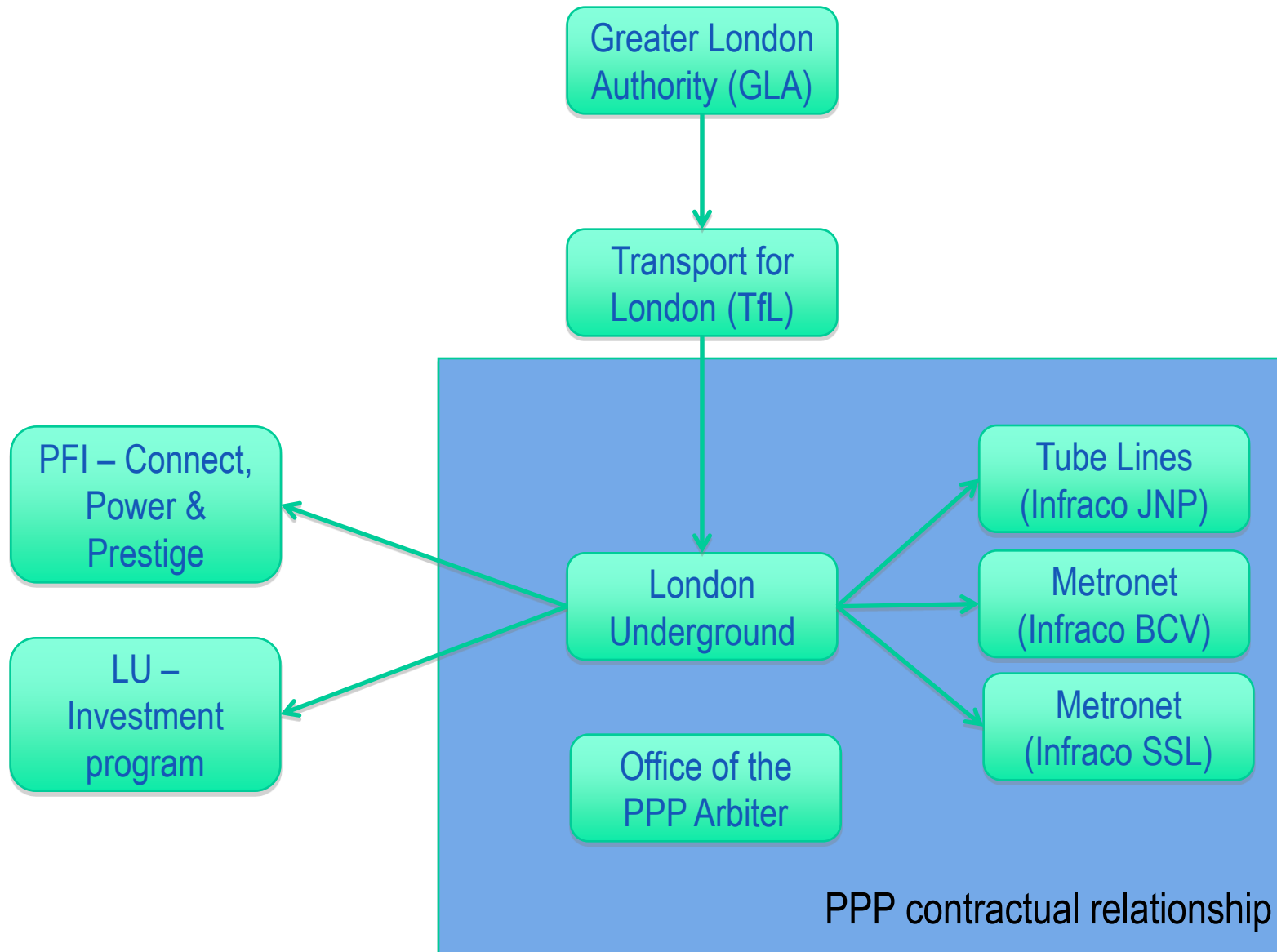
- LU needed sustained and stable funding in order to continue to operate a safe and reliable mass transit system
- In excess of \$3 Billion investment backlog to bring assets to a State of Good Repair
- Public Sector – Annualised Funding is very inefficient in delivery of long-life assets
- From the outset – the potential for Billions of Dollars of additional investment.

## Operational

- Vast engineering assets of every discipline – LU struggled from a resource and skill shortage
- Public sector culture
- Injection of capital project delivery expertise
- Injection of private sector thinking – including whole life asset management

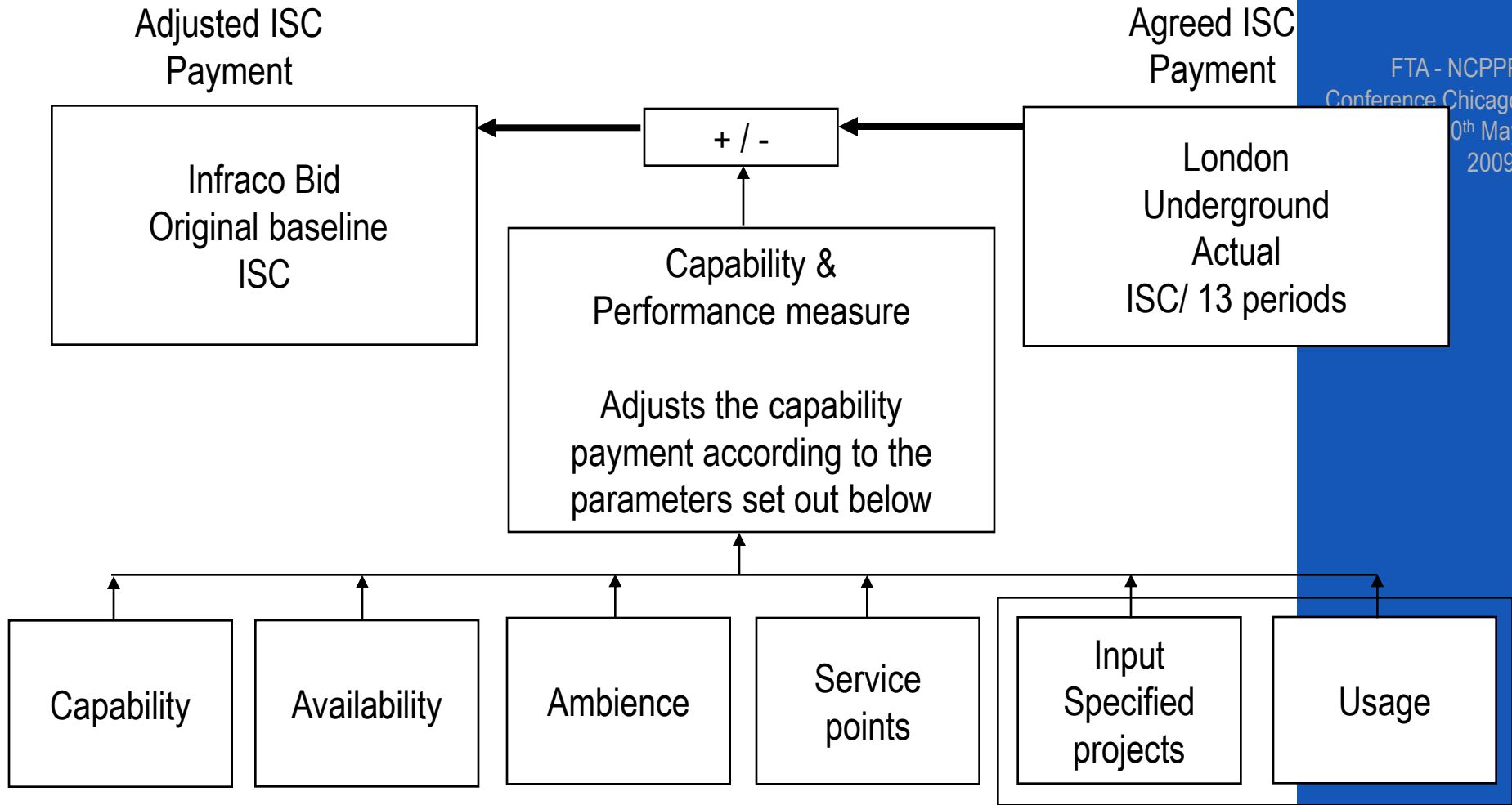


# Structure of the PPP...



PPP contractual relationship

# How the PPP is financed...



- Journey time capability
- Service control
- Service consistency

# PPP asset management obligations...

- In carrying out its duties as a steward, an Infraco should *improve asset condition generally*, both during the 30 year Contract period and for a reasonable time thereafter to minimise safety and service loss risks.

## *Infracos must:*

- adopt efficient and economic *whole-life asset management* as established by reference to Good Industry Practice.
- over time, *bring* the Assets to an overall *state of good condition*
- *provide* LUL with *assurance* in relation to the above.
- *develop plans* to assist LUL and other Infracos with the efficient co-ordination of their respective activities on the Underground Network
- *promote confidence* between the parties as to the way they will discharge their respective obligations in relation to the Delivery into Service of new Assets and Facilities.



## (2). Metronet Rail – Asset Management improvement Program



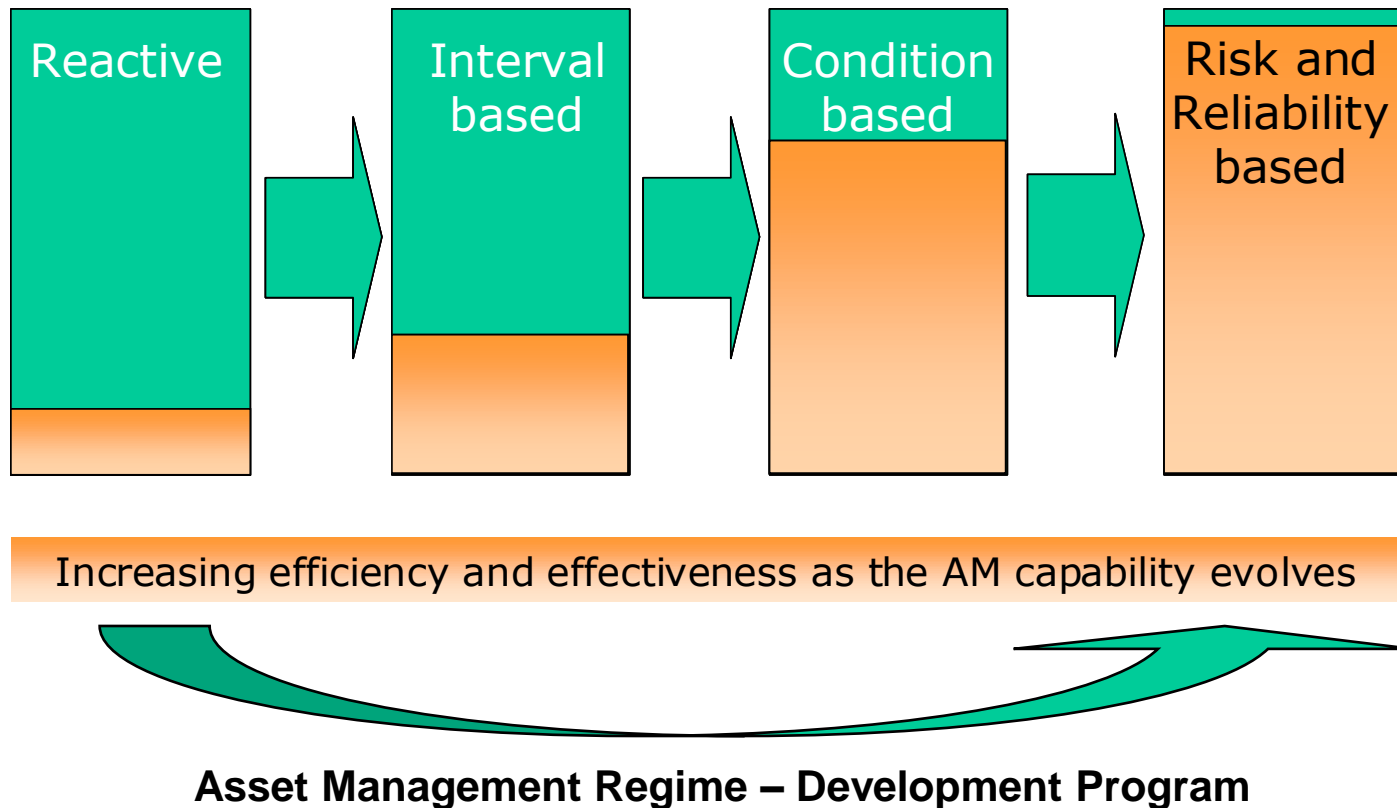
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# Need for improvement...

**Arbiters comments (2005):** Asset Management: ...In particular, there has so far been limited application of risk based approaches that incorporate a strong understanding and link to underlying costs and serviceability of assets.



Approach taken...

**Examine the  
situation**

**Execute the  
improvements**



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International Infrastructure  
Management Manual

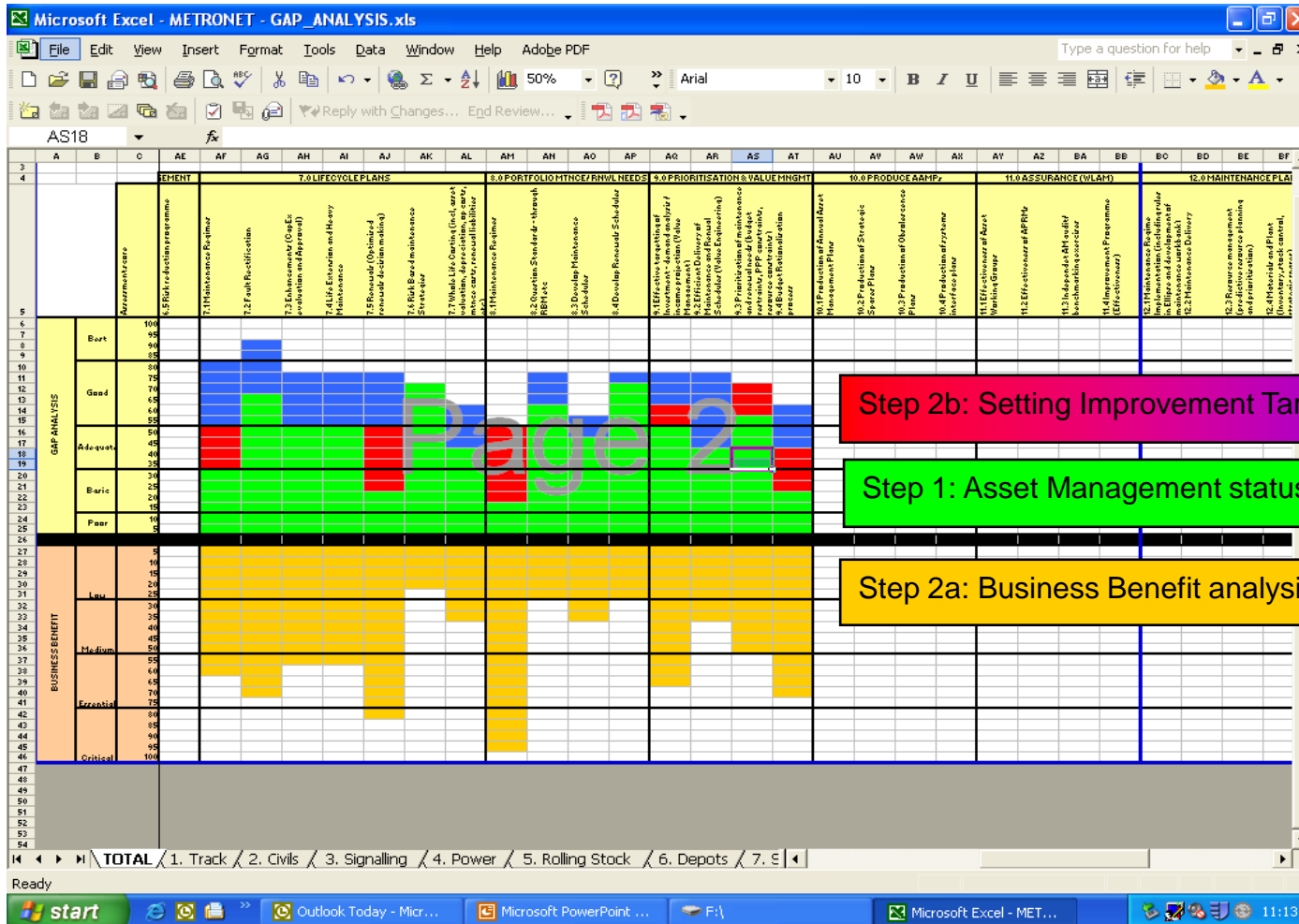
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**THE INSTITUTE OF ASSET MANAGEMENT**

# Assessing capability

Lessons Learnt from  
London  
Undergrounds  
Experience with  
Public Private  
Partnerships

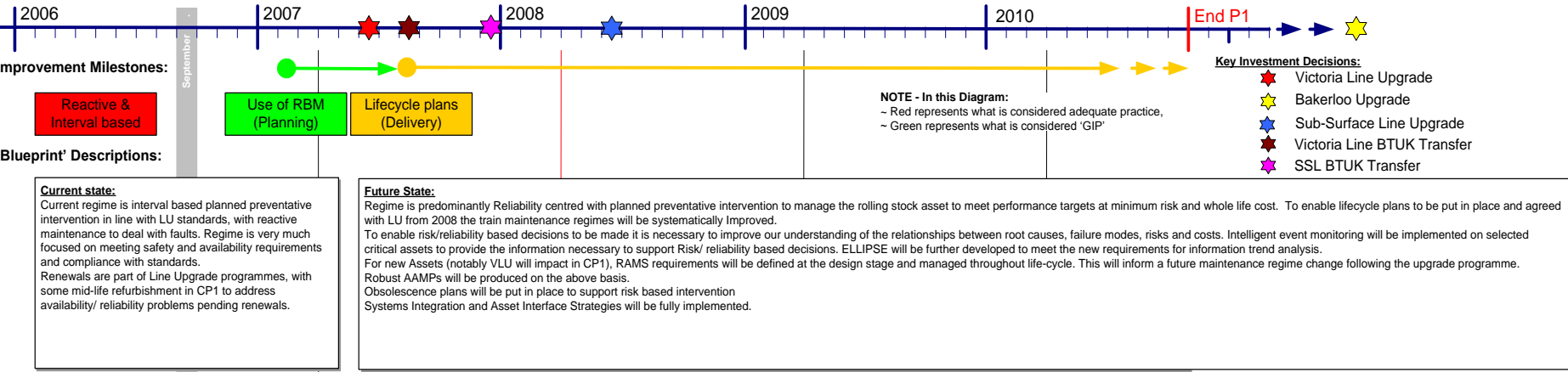
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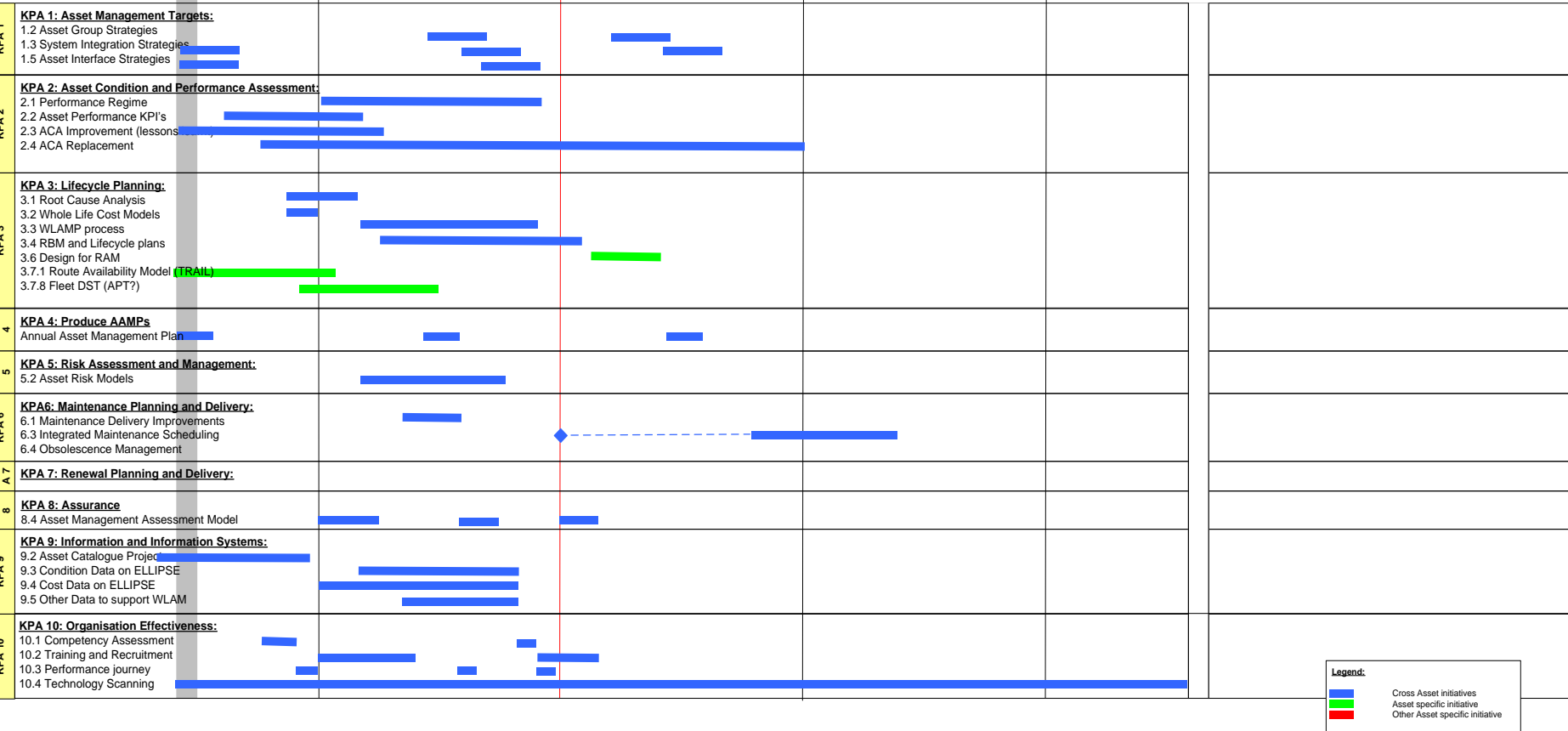
Data shown for demonstration purposes only

ROADMAP FOR AMR DEVELOPMENT - FLEET AND DEPOTS ASSETS

Filename: 20060927-AMR\_asset\_roadmap (v4).vsd  
Version no.: 1.4  
Status: Internal review  
Author: Dr Christian Roberts  
Date created: 2nd October 2006  
Version date: 23rd February 2007



Improvement Projects (cf AMR Development Programme):





# Program scope

- **Asset condition monitoring and recording:**
  - New measures of AC & Health – extended to replace ACAC
  - Embedding of Remote condition Monitoring kit into AP processes
- **Transfer to new maintenance regimes:**
  - Risk models and risk based maintenance
  - Improved analysis capability
  - Revised maintenance scheduled tasks (MSTs)
- **Whole life planning toolset:**
  - WLC analysis standardisation
  - Development of specialist Decision Support Tools
  - Specifying standards for AAMP production
- **Asset management capability:**
  - AM maturity assessment
  - Competence assessment and training

Over and above the implementation of an **Enterprise Asset Management System**

## Other examples of this approach...

- Center of capability for railway asset management – working with operators, infrastructure maintainers, financiers, contractors and regulators in the through life management of rail systems
- Current clients include:
  - Merseyrail (UK Train Operator) – Fleet Asset Management Improvement Program with US\$11M benefits by 2015.
  - Queensland Rail (Australia) – Infrastructure Asset Management Improvement Program
  - Tube Lines (London Underground) – Technical Advisors to PPP restatement of terms
  - Network Rail (UK Infrastructure) – value management of enhancement projects

(3).

# Lessons Learnt



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# Observations of US transit systems

- You face many of the same issues we face in the UK
  - Ridership is on the increase, driven by increasing gas prices, congestion, and awareness of climate change
  - Ageing infrastructure and a backlog of investment
- Rail and transit asset management is still in its infancy – opportunity to embrace lessons from other parts of the globe

## **Metro Chief Predicts Transit 'Death Spiral' Without Extra Funds**

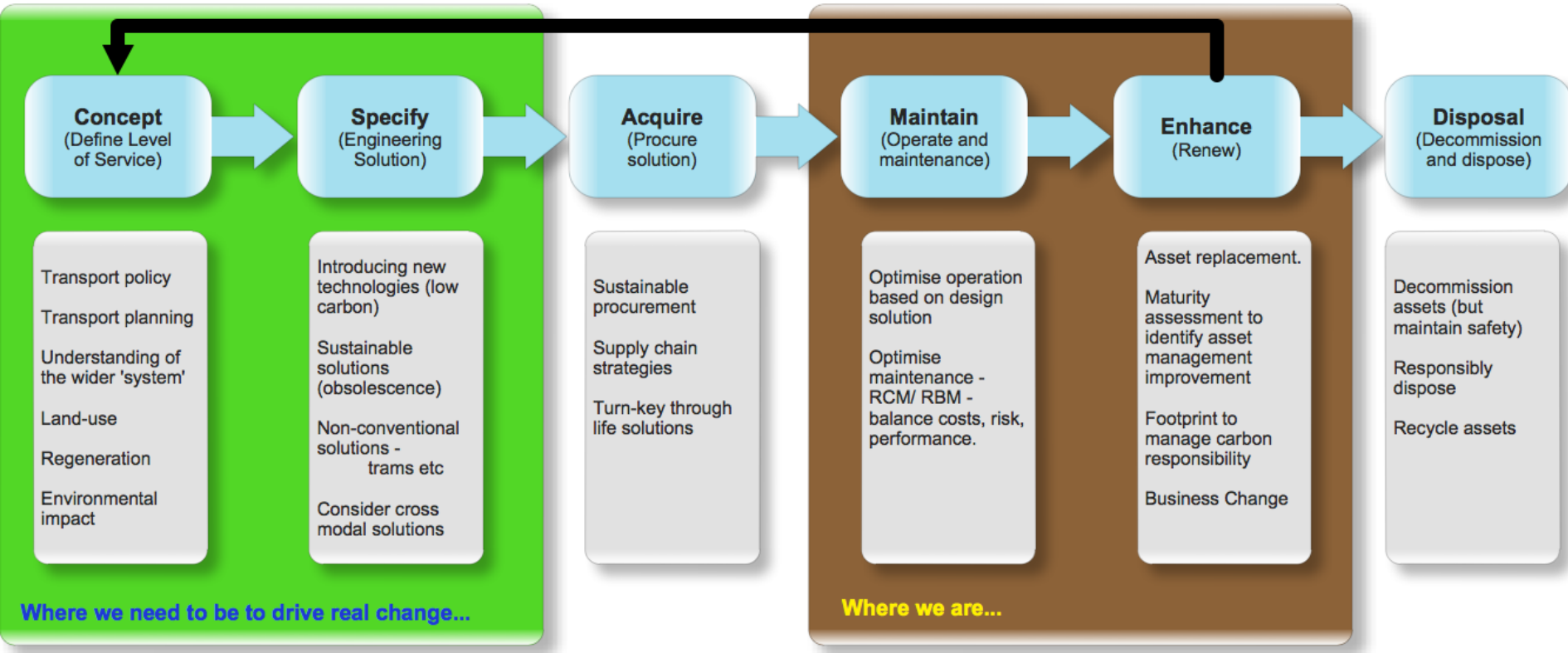
“Budget disputes in Maryland and Virginia and on Capitol Hill threaten to push the region's transit system into a "death spiral" littered with broken-down trains, overcrowded buses, frozen escalators and crumbling parking lots...”

Washington Post Friday, April 2, 2004; Page B01



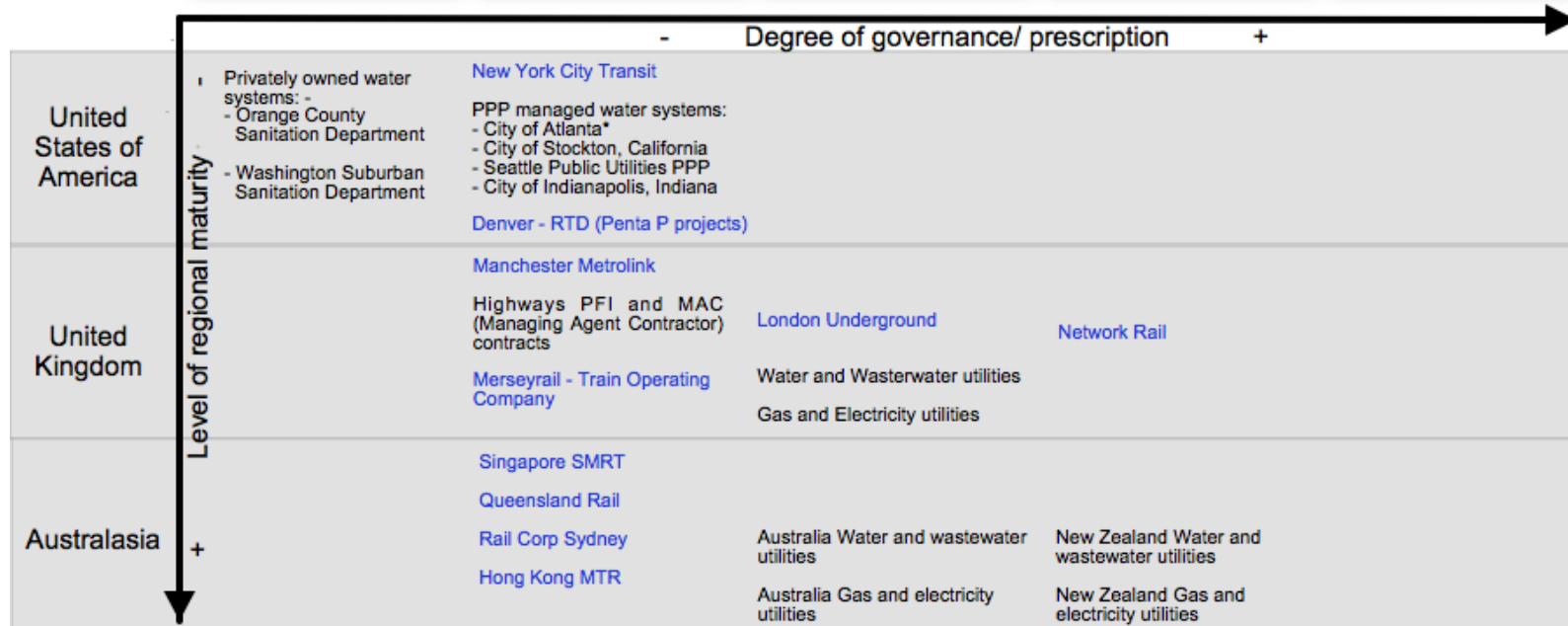
# Managing Transport Asset Lifecycles – moving forward...

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# Asset Investment...

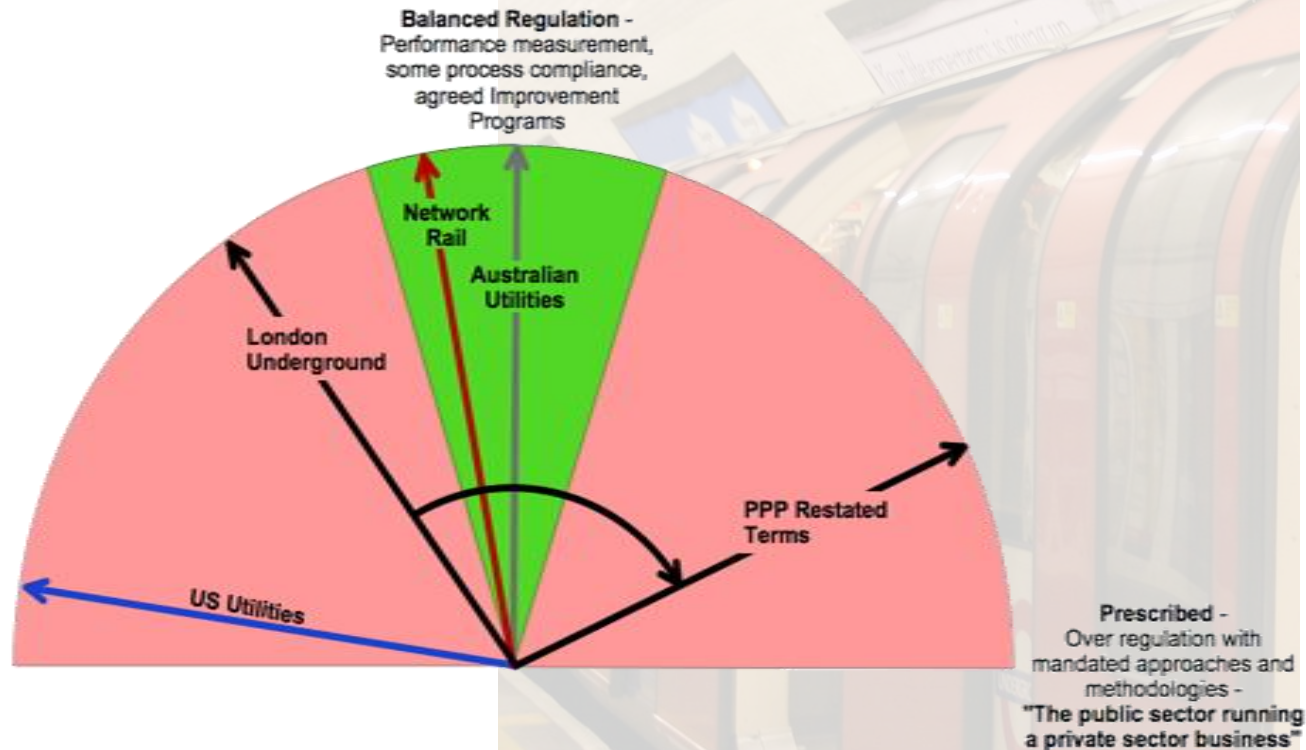
In general we have found that the relationship between a Regulatory Entity and Managing Entity and the degree of prescription in the contract is heavily related to the maturity of Asset Management across the different regions and industries/ organizations



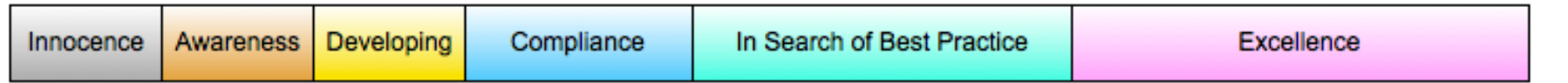
\* Note: Refers to the City of Atlanta PPP - this has since been taken back due to poor performance of the PPP managing entity  
Blue text refer to commuter rail and rail transit organisations

# Regulatory balance (including PPP oversight)...

- Regulation should reflect an explicit, formal contract between business and society



# Getting smarter with Asset Management...



## Quality Management Systems

BS EN ISO 9001:2000

European Foundation for Quality Management (EFQM)

## Asset Management Systems

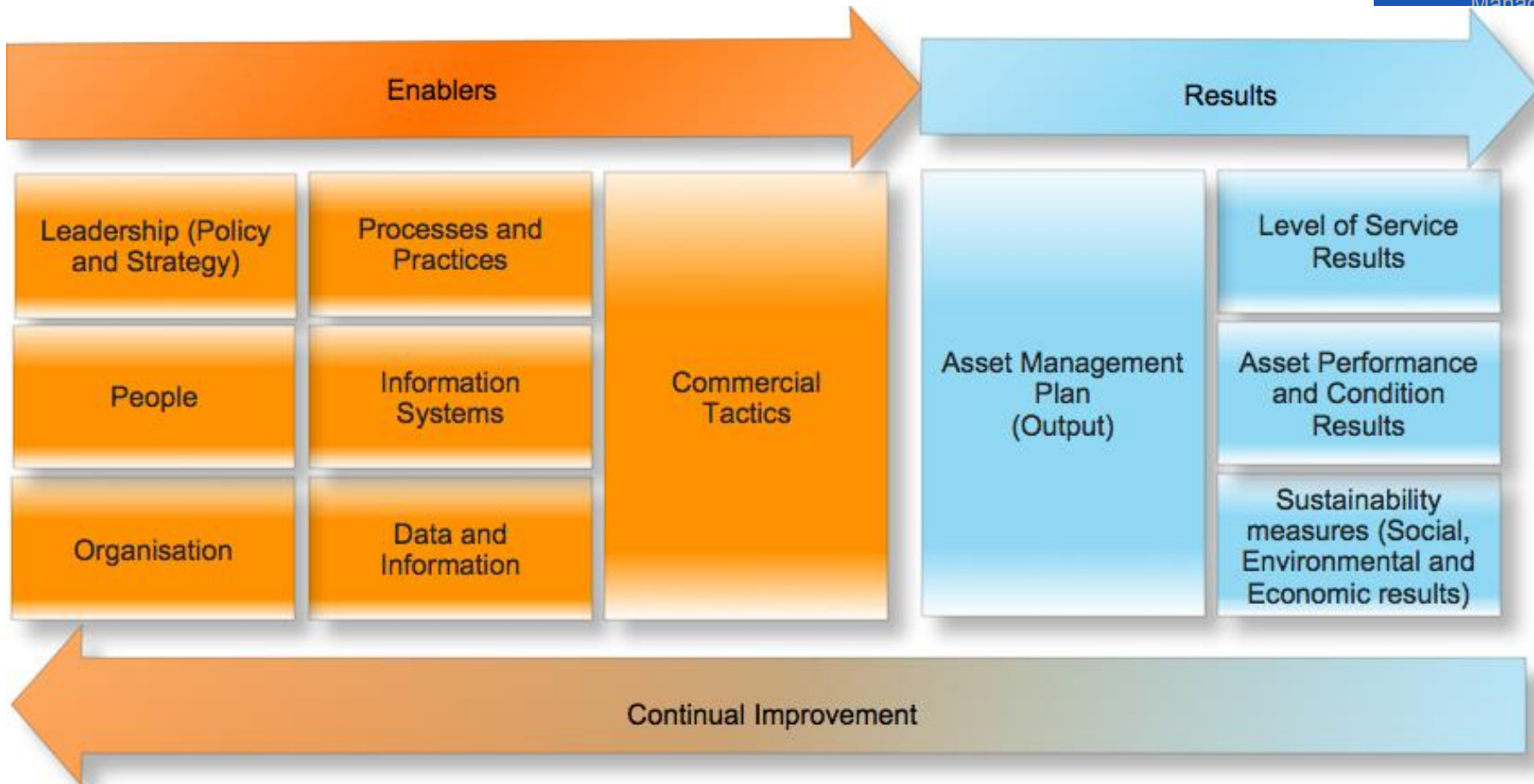
BS PAS 55:2008

**GHD's TOTAL ENTERPRISE ASSET MANAGEMENT QUALITY  
FRAMEWORK**



# TEAMQF A quality framework for Asset Management...

Investing in an  
Alternative Transport  
Future:  
The Role of Asset  
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# Opportunity to move forward as a 'collective'

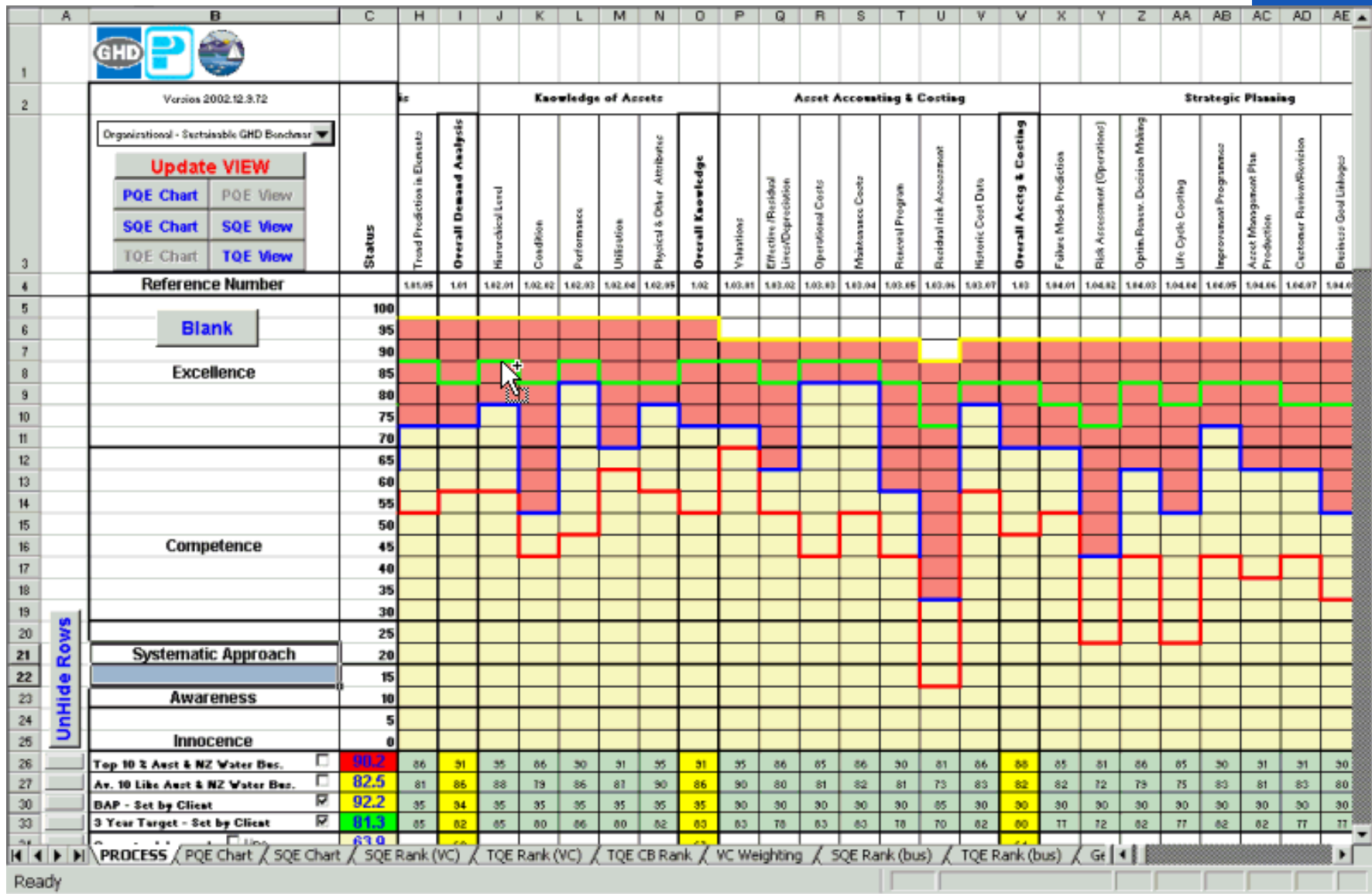
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# Lessons...

1. Know the state of Assets before you outsource delivery.
2. Honeymoon period – where both parties can settle into the relationship, develop working practices etc
3. Put in place recognised Management systems – including ISO 9001 etc but also the new PAS-55:2008 and audit
4. Introduce rigorous Asset Management Planning processes with interaction and contribution from both parties
5. Introduce ongoing Assessment – and continual improvement incentives for the Asset Management Regime.

# Some thoughts to take away...

- Better Asset Management makes investment in transport infrastructure more attractive
- Better Asset Management comes from open competition or balance regulated private sector involvement
- There are financial, environmental and societal benefits to had with current asset systems

But

- Working together and embedding a common quality framework should be seen as a priority and needs to be completed at bid stage so both parties have a common expectation.



For further information on GHD Asset  
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